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CERTIFICATE OF TRANSLATION

James D. Hughes, a translator with the firm of S. SOGA & Co.,
Tokyo, Japan STATES:

(1) that I know well both the JAPANESE and English languages;

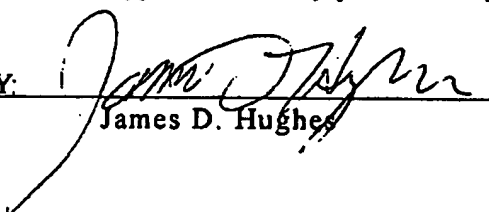
(2) that I translated the attached document identified as the complete File Wrapper of Japanese Patent No. 3512417 (Japanese Pat. Application No. H07-510376, PCT/US94/10717) from JAPANESE to English;

(3) that the attached English translation is a true, correct and accurate translation of the document attached thereto to the best of my knowledge and belief; and

(4) that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both under 18 USC 1001, and that such false statements may jeopardize the validity of the application or any patent issuing thereon.

DATE: May 6, 2005

BY:


James D. Hughes

SCH 036245

7-510376

SCH 036246

File Documents

在 中 文 書

送達通知 7. 4. 20	transmittal notice 95. 4. 20
優先權證明書 7. 4. 20	priority document 95. 4. 20
取 訴 通 知 7. 6. -8	election notice 95. 6. 8
予備審查報告 7. 9. 14	Prelim Exam Report 95. 9. 14
國內書面翻譯文 8. 4. 01	national phase translation 96. 4. 01
補正書(方式) 8. 6. -6	amendment (formality) 96. 6. 6
刊行物等提出書 13. 9. 18	submission of publications 01. 9. 18
通 知 13. 11. 20	office notice 01. 11. 20
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意見 補 正 14. 5. 28	argument/amend 02. 5. 28
拒 絕 14. 7. 16	rejection 02. 7. 16
審判請求平成14年 10月 15日	appeal request Oct. 15, 2002
閱覽申請 15. 8. 22	file wrapper investigation request 03. 8. 22
手續補正書 15. 10. 30	procedural amendment 03. 10. 20

Documents According to Stipulations of Art. 184, 5-1 of the Patent Law

(21,000 yen)

March 29, 1996

Commissioner of JPO

1. INTERNATIONAL APPLICATION NO.

PCT/US 94/10717

2. TITLE OF INVENTION

Safety Razor

3. INT'L FILING DATE

Sep 22, 1994

4. INVENTOR

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The Gillette Company

REPRESENTATIVE

will be supplemented later

NATIONALITY

US

Formality

Exam

JPO

April 1, 96

Int'l App Section

SCH 036248

6. AGENT

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7. LIST OF APPENDED DOCUMENTS

- (1) Copy of documents stipulated by Art. 184, 5-1
of the Patent Law 1 set
- (2) Translation of Specification 1 set
- (3) Translation of Claims 1 set
- (4) Translation of Abstract 1 set
- (5) Power of Attorney and Translation thereof 1 set each
supplemented later

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7337 Patent Attorney M. Satou

Procedural Amendment

June 5, 1996

Commissioner of JPO

1. INDICATION OF THE CASE.

**PCT/US 94/10717
Heisei 7 Patent Application No. 510376**

2. TITLE OF INVENTION

Safety Razor

3. AMENDANT

Relation to Case

Patent Applicant

The Gillette Company

4. AGENT

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6428 Patent Attorney Kazuo Satou**

5. DATE OF AMENDMENT INSTRUCTIONS

Mailing Date YY MM DD

6. SUBJECT OF AMENDMENT

**Applicant entry in docs stipulated by Art. 184,
5-1 of the Patent Law and Power of Attorney
1 set**

7. CONTENT OF AMENDMENT

As appended

SCH 036250

Request for Examination

(86,600 yen)

August 21, 2001

Commissioner of JPO

1. PATENT APPLICATION NO.

Heisei 7 Patent Application No. 510376

2. TITLE OF INVENTION

Safety Razor

3. NUMBER OF CLAIMS

12

4. REQUESTEE

The Gillette Company

5. AGENT

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6428 Patent Attorney Kazuo Satou

SCH 036251

Document Type: Written submission of publications

Date of submission: 18 September 2001

Attention: Commissioner, Japan Patent Office

Details:

Application No.: H07-510376

Submitter:

Address: removed

Name: removed

Submitted Publications:

1. Utility Model Laid-open Publication No. S58-88974
2. Patent Publication No. S63-52911
3. Utility Model Publication No. S57-55812
4. Patent Publication No. S61-14834
5. Patent Laid-open Publication No. S53-56556
6. Patent Publication No. S57-44354
7. Patent Publication No. S43-21696
8. Patent Publication No. S43-21697

Reasons for Submission

(1) Regarding Claim 1

Claim 1 of the present invention describes a safety razor unit wherein the first blade has an exposure value less than zero and forms the edge closest to the guard, while the third blade has an exposure value no less than zero and forms the edge closest to the cap.

Figure 3 of Publication 1 above shows a structure exactly the same as that of Claim 1. While said structure is not clearly distinguishable when read by a scanner from microfilm, it is slightly clearer on the paper version of the Utility Model Laid-open Publication. Applying a ruler to Figure 3 of Publication 1 using the same blade exposure value measuring method as that defined on line 6 onwards in the right column (5) on page 2 of the Unexamined Patent Publication of the present invention, even though said

figure is not very clearly defined, it can be clearly seen that the structure of Claim 1 of the present invention is being described. Put simply, Figure 3 of Publication 1 shows that the blade edge of lower blade 5 is clearly recessed in relation to the tangent drawn from the blade edge of middle blade 4 to the guard bar of blade receiving plate 7. In addition, the blade edge of upper blade 3 clearly protrudes in relation to the tangent drawn from the blade edge of middle blade 4 to cap portion 6.

Therefore, the invention described in Claim 1 is identical to that described in Publication 1 and should therefore be rejected in accordance with Article 29, Paragraph 1, Subsection 3 of the Patent Law.

Furthermore in Publication 2, it is described both in areas other than the scope of the claims and in the figures that the upper blade whose blade edge is closest to the cap has a positive exposure while the lower blade whose blade edge is closest to the guard has a negative exposure.

Publication 2 does relate to a two-bladed safety razor but because it is already clearly shown in said publication that the upper blade whose blade edge is closest to the cap has a positive exposure while the lower blade whose blade edge is closest to the guard has a negative exposure, if a third blade were to be inserted between the upper blade and the lower blade, it would be easy to invent the structure described in Claim 1 (of the present invention) based on the contents of said publication.

Therefore, the invention described in Claim 1 could be easily invented by those skilled in the art based on the invention described in Publication 2 and thus should be rejected in accordance with Article 29, Paragraph 2 of the Patent Law.

(2) Regarding Claim 2

Claim 2 describes a safety razor blade unit as described in Claim 1 wherein the exposure value of the first blade is a negative value and is no less than -0.2mm.

The exposure of the first blade(s) indicated in the Publications is as follows:

Publication 3: -0.05mm – 0.1mm

Publication 4: -0.026mm – -0.126mm

Publication 5: -0.05mm – 0.1mm (left lower column, page 2 of the
Unexamined Patent Publication)

Therefore, a negative exposure value no less than -0.2mm is described for the first blade in Publications 3 to 5, while Publication 5 in particular includes the values described in Claim 2 although with a wider range. Furthermore, there is no description in Claim 2 of the present invention as to what remarkable effects are exhibited by the value limitations relative to the publicly known values of Publications 3 through 5. Applying publicly known exposure values of a two-bladed razor to a three-bladed razor is a matter that could be easily conceived by a person skilled in the art.

In light of these points, the invention described in Claim 2 could be easily invented by those skilled in the art based on the invention described in Publications 1 through 5 and thus should be rejected in accordance with Article 29, Paragraph 2 of the Patent Law.

(3) Regarding Claim 3

Claim 3 describes a safety razor blade unit as described in Claim 2 wherein the width (span) between the first (blade) edge portion and the guard ranges from 0.5mm to 1.5mm.

The width (span) between the first (blade) edge portion and the guard described in the publications is as follows:

Publication 3: 0.7mm – 2.0mm

Publication 4: 1.01mm – 1.65mm

Publication 5: 0.7mm (amended on 25 November 1977) – 2.0mm

Publication 6: 1.5mm

None of the above publications describe a value from 0.5mm to less than 0.7mm. However, the publications also describe various values such as these, so even in the absence of a description of values which differ only slightly from these values, they could still be easily selected by a person skilled in the art. Furthermore, there is no description in Claim 3 of the present invention as to what remarkable effects are exhibited by the value limitations relative to the publicly known values of Publications 3 through 6. Applying publicly known span (values) of a two-bladed razor to a three-bladed razor and a

single-bladed safety razor unit is a matter that could be easily conceived by a person skilled in the art.

Therefore, the invention described in Claim 3 could be easily invented by those skilled in the art based on the invention described in Publications 1 through 6 and thus should be rejected in accordance with Article 29, Paragraph 2 of the Patent Law.

(4) Regarding Claim 4

Claim 4 describes a safety razor blade unit as described in Claim 1 wherein the exposure value of the third blade is approximately equal to -0.04mm.

This value is included within the range of the value described in Publication 4, namely -0.026 to -0.126mm. Applying publicly known exposure values of a two-bladed razor to a three-bladed razor and a single-bladed safety razor unit is a matter that could be easily conceived by a person skilled in the art.

Therefore, the invention described in Claim 4 could be easily invented by those skilled in the art based on the invention described in Publications 1, 2 & 4 and thus should be rejected in accordance with Article 29, Paragraph 2 of the Patent Law.

(5) Regarding Claim 5

Claim 5 describes a safety razor blade unit as described in Claim 1 wherein the exposure value of the third blade is a positive value less than 0.2mm.

The exposure value of the third blade(s) described in the Publications is as follows:

Publication 3: -0.05mm – 0.1mm

Publication 5: -0.05mm – 0.1mm

Publication 6: 0.03mm

Accordingly, these publications describe a positive exposure value of the third blade of less than 0.2mm. Applying publicly known exposure values of a two-bladed razor to a three-bladed safety razor unit is a matter that could be easily conceived by a person skilled in the art. Therefore, the invention described in Claim 5 could be easily invented by those skilled in the art based on the invention described in Publications 1, 2, 3, 5 & 6 and thus

should be rejected in accordance with Article 29, Paragraph 2 of the Patent Law.

(6) Regarding Claim 6

Claim 6 describes a safety razor blade unit as described in Claim 1 wherein the width between the edge portion of the third blade and the edge portion of the second blade ranges from 1.0mm to 2.0mm.

The width referred to in this claim is the span between the edges of the two adjacent blades, and the span(s) between the adjacent blades described in the publications is as follows:

Publication 3: 0.7mm – 2.0mm

Publication 4: 1.01mm – 1.65mm

Publication 5: 0.7mm – 2.0mm

Publication 6: 1.6mm

The values described in Claim 6 lie within the scope of those described in the publications. Also, Publications 3 through 6 relate to a two-bladed safety razor unit but a person skilled in the art could easily apply the values for the distance between the edges of two blades to the values for the distance between the edges of two adjacent blades in a three-bladed safety razor unit.

Therefore, the invention described in Claim 6 could be easily invented by those skilled in the art based on the invention described in Publications 1 through 6 and thus should be rejected in accordance with Article 29, Paragraph 2 of the Patent Law.

(7) Regarding Claim 7

Claim 7 describes a safety razor blade unit as described in Claim 1 wherein the width between the edge portion of the second blade and the edge portion of the first blade ranges from 1.0mm to 2.0mm.

Claim 7 should be rejected for the same reason as Claim 6.

(8) Regarding Claim 8

Claim 8 describes a safety razor blade unit as described in Claim 1 wherein the width of the interval between the edge portion of the first blade and the edge portion of the second blade and/or the interval between the edge portion

of the second blade and the edge portion of the third blade is approximately equal to 1.5mm.

The width (between) the edge portions of the adjacent blades are, like (6) above, described in the publications, while the values described in Publications 3 through 5 include the value of 1.5mm.

Therefore, Claim 8 should be rejected for the same reason as Claim 6.

(9) Regarding Claim 9

Claim 9 describes a safety razor blade unit as described in Claim 1 wherein the exposure value of the second blade is no less than that of the first blade, and no greater than that of the third blade.

This same structure is shown in Figure 3 of Publication 1. In other words, drawing a common tangent between the blade edge of lower blade 5 and the blade edge of upper blade 3 in Figure 3, it can be clearly seen that the blade edge of middle blade 4 is above said common tangent and that the exposure value is approximately zero. In addition, the blade edge of lower blade 5 is clearly recessed in relation to the tangent drawn from the blade edge of middle blade 4 to the guard bar of blade receiving plate 7, and the blade edge of upper blade 3 clearly protrudes in relation to the tangent drawn from the blade edge of middle blade 4 to cap portion 6.

Therefore, the structure of Figure 3 of Publication 1 is identical to that of the invention described in Claim 9 and should therefore be rejected in accordance with Article 29, Paragraph 1 Subsection 3 of the Patent Law.

Furthermore, in a safety razor blade where it has been established that the exposure value of the lowest blade is negative and the exposure value of the uppermost blade is positive, it would be a simple matter for those skilled in the art to select an exposure value for the intermediate blade which lies between these values.

Therefore, the invention described in Claim 9 could be easily invented by those skilled in the art based on the invention described in Publications 1 & 2 and thus should be rejected in accordance with Article 29, Paragraph 2 of

the Patent Law.

(10) Regarding Claim 10

Claim 10 describes a safety razor blade unit as described in Claim 9 wherein the exposure value of the second blade is approximately zero.

A safety razor wherein the exposure value of the second blade is approximately zero is shown "as is" in Figure 3 of Publication 1. As previously stated in (9) above, it can be clearly seen that the exposure value of middle blade 4 is approximately zero when a common tangent is drawn between the blade edge of lower blade 5 and the blade edge of upper blade 3 in Figure 3.

Furthermore, an exposure value of zero or approximately zero lies within the values described in Publications 3 & 5. The exposure value described in Publication 4 of -0.026mm is a value close to zero. While these values do not belong to the middle blade, a variety of values are described for the upper and lower blades, and a safety razor is a device which cuts shavings with a blade edge so there is no special reason which stipulates that the exposure value of the middle blade must be a special value different to those of the other blade/s.

The purpose of each of the three blades is to cut shavings so, in the case of negative exposure values, if the negative values are high it would become impossible to cut shavings with. Therefore, it would be obvious to those skilled in the art that the negative values would have to fall within the realms of common sense, and the negative exposure values of the present application fall within said realms.

Furthermore, in the case of positive exposure values, if said values are high, damage would be caused to the skin during use. Therefore, it would be obvious to those skilled in the art that the positive exposure values would also have to lie within a range that would not damage the skin, and such commonsense values are described in each of the publications. The values described in Claim 10 of the present invention are also such commonsense values. In selecting the exposure value of the second blade, it is obvious to those skilled in the art that these values would be similar to

conventionally-employed values, and there is absolutely no difficulty involved in setting an exposure value of the second blade close to zero when manufacturing a three-bladed safety razor.

Therefore, the invention described in Claim 10 could be easily invented by those skilled in the art based on the invention described in Publications 1 through 5 and should thus be rejected in accordance with Article 29, Subsection 2 of the Patent Law.

(11) Regarding Claim 11

Claim 11 describes a safety razor blade unit as described in Claim 1 wherein the exposure value of the third blade is a positive value approximately as large as the negative exposure value of the first blade.

Applying a ruler to Figure 3 of Publication 1 and examining the exposure value of lower blade 5 (which is equivalent to the first blade) and the exposure value of upper blade 3 (which is equivalent to the third blade), it can be seen that their absolute exposure values are approximately the same. Therefore, the invention described in Claim 11 is identical to the invention described in Figure 3 of Publication 1.

When confirming that the exposure value of the lowest blade is negative and the exposure value of the uppermost blade is positive, and when debating what their level of protrusion and recession should be, the relationship between said values is such that a person skilled in the art would immediately realize that the absolute values should be the same. This is because, as seen in Publications 2 through 8, there have been many years of debate as to how the exposure values should be determined, and because the exposure values of a safety razor are extremely small and the scope of choice so narrow that if one were to select values from such narrow a scale, then it would totally acceptable and in no way a difficult task to select positive and negative exposure values with the same absolute values.

Therefore, the invention described in Claim 11 could be easily invented by those skilled in the art based on the invention described in Publications 1 through 6 and should thus be rejected in accordance with Article 29, Paragraph 1 Subsection 3 and Paragraph 2 of the Patent Law.

(12) Regarding Claim 12

Claim 12 describes a safety razor blade unit as described in Claims 1 through 11 wherein the width between the blade edge of the first blade and the guard is substantially smaller than the width between the edge portions of the first blade and the second blade and the width between the edge portions of the second blade and the third blade.

Put simply, Claim 12 describes that the span between the blade edge of the lower blade and the guard is smaller than the span of the blade edges between the blades.

This is described on the third line of the left lower column on page 4 of the Laid-open Examined Patent Publication of Publication 6 which describes that SL is 1.5mm and SF is 1.6mm, where SL represents the span between the blade edge of the lower blade and the guard, and SF represents the span between the blade edges between blades. Any person skilled in the art could come up with the invention of Claim 12 by referring to this description.

Therefore, the invention described in Claim 12 could be easily invented by those skilled in the art based on the invention described in Publications 1 through 6 and should thus be rejected in accordance with Article 29, Paragraph 2 of the Patent Law.

(13) Summary

The present invention relates to value limitations of the blade exposure values and span values of a safety razor.

As can be clearly seen from lines 14 onward in the left column of page 5 of Publication 7 and from the first line onwards in the left column of page 2 of Publication 8, these figures have been a point of discussion for thirty five years or more. Furthermore, as clearly illustrated by the other publications, a great deal of research has been carried out on the matter since. Therefore these figures themselves could be easily selected by a person skilled in the art and do not pose any real difficulty. The only point on which the invention of the subject application differs is that the invention relates to a

three-bladed safety razor whereas the figures of the publications relate to a two-bladed safety razor.

A patent is sought for the present invention regarding the relationship between the exposures of the three blades but this relationship is demonstrated in Figure 3 of Publication 1 with the only issue being that said publication does not indicate the figures. However, although this publication does not describe which figures are appropriate, the other publications do.

As previously stated, the razor will not be able to cut if the exposure values are too small and will become dangerous if the exposure values are too large so their determination is an inevitable conclusion. The maximum exposure value described in the publications is 0.1mm while the minimum exposure value is -0.2mm. Restricting the use of figures within this range would unfairly impede the interests of third parties. Publication 7 describes figures relating to exposure and span that are completely different to those mentioned above, but these figures are structurally possible and are not used for typical razors but instead have special applications such as shaving sideburns.

The razor will also be dangerous to use if the span values are too wide and won't be practical if the span values are too narrow because the shavings won't be able to pass between the blades. Therefore, the determination of span values is also an inevitable conclusion. The maximum span value between the lower blade and the guard bar described in the publications is 2.0mm and the minimum span value is 0.7mm. The maximum span value between two blades is 2.0mm while the minimum is 0.7mm. As such, adding a restriction to the use of figures within this range would unfairly impede the interests of third parties.

Senior Formality Examiner	Primary Formality Examiner	Formality Examiner
	Goino	

Japan Patent Office Action

**7 November 2001
JPO Commissioner**

Patent Attorney for the Applicant: Kazuo Satoh, Esq. (& 3 others)

H07 Patent Application No. 510376

The following is to notify that information in the form of a written submission of publications was tendered to the Japan Patent Office on 18 September 2001 in which were contained reasons why the invention of the subject application is not patentable.

Mailing date: 20 November 2001

Submitted information can be viewed by filing a request to view the file of the subject application except in the event that said viewing would interfere with the execution of JPO business such as during examination.

SCH 036262

[document name] Notice of Preliminary Rejection [mailing date] Nov. 27, 2001
[patent] H07-510376 (Sep. 22, 1994) [issue no.] 559014 pg. 1/2

Notice of Preliminary Rejection

Patent Application Number: Heisei 7 Patent Application No. 510376
Issue Date: November 19, 2001
JPO Examiner: Kohsaku Tamura 9618 3C00
Patent Agent for Applicant: Kazuo Satou (& 3 others)
Article Applied: Art. 29, para. 2

The present application should be rejected for the following reasons. If there are any arguments against these reasons, please submit an Argument within 3 months of the mailing date of this notice

Reasons

The inventions of the following claims can be easily invented by those having common knowledge in the art to which this invention pertains, based on the publications mentioned below that were distributed in Japan or in foreign countries before the filing of the present application, so the present application cannot receive a patent based on the stipulations of Art. 29, para. 2 of the Japanese Patent Law.

Note (Refer to the List of Cited References)

Claim 1

Cited References 1 to 3

Memo

Reference 1 discloses a safety razor unit in which the blade defining the edge nearest the guard has a negative exposure value and the blade defining the edge nearest the cap has a positive exposure value.

Applying the points described in Reference 1 with the very common 3 bladed razors of References 2 and 3 to construct the invention of present claim 1 is easily conceivable by those skilled in the art.

Further, even though not described in References 2 and 3, by referring to their drawings one can easily see that they both show the points of the blade defining the edge nearest the guard has a negative exposure value and the blade defining the edge nearest the cap has a positive exposure value.

Claims 2-12

Cited References 1-3

Memo

SCH 036263

[document name] Notice of Preliminary Rejection [mailing date] Nov. 27, 2001
[patent] H07-510376 (Sep. 22, 1994) [issue no.] 559014 pg. 2/2

The values of the amount of blade exposure, span between edges, etc. are merely matters that can be appropriately selected by those in the art according to need. Further, the point of the second blade having an amount of exposure that is almost zero, as well as the blade defining the edge nearest the guard has a negative exposure value and the blade defining the edge nearest the cap has a positive exposure value are merely matters of design that can arrived at as a matter of course by those skilled in the art.

List of Cited References

JP Pat Pub. 63-52911
JP UM App. No. 56-184343 (UM Application Laid-open No. 58-88974)
USP 4,200,976

Record of Search for Prior Art

Technical Fields Searched

IPC Vol. 7, B26B21/22 B26B21/14

This record of the search for prior art does not constitute a reason for rejection.

Contact information for questions regarding this Notice of Rejection

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SCH 036264

Request for Extension of Term

(2,100 yen)

Feb. 25, 2002

Commissioner of JPO

1. INDICATION OF CASE

Heisei 7 Patent Application No. 510376

2. TITLE OF INVENTION

Safety Razor

3. REQUESTEE

The Gillette Company

4. AGENT

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6428 Patent Attorney Kazuo Satou

5. CONTENT OF REQUEST

In regard to the above application, as the Argument due Feb. 27th has not yet been fully prepared, a 3-month extension of the above period is requested.

SCH 036265

Argument

May 27, 2002

Commissioner of JPO

1. INDICATION OF CASE

2. TITLE OF INVENTION

3. APPLICANT

4. AGENT

Heisei 7 Patent Application No. 510376

Safety Razor

The Gillette Company

**Kyowa Patent and Law Office
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Chiyoda-ku, Tokyo
[Tel. Tokyo (3211)2321]**

6428 Patent Attorney Kazuo Satou

5. DATE OF REJECTION

**issue number 559014
date of mailing November 27, 2001**

SCH 036266

6. Reason

(1) The examiner found that the inventions of each of the claims can be easily invented based on the JP Pat Pub. 63-52911 (Cited Reference 1), JP UM App. No. 56-184343 (Cited Reference 2) and USP 4,200,976 (Cited Reference 3) so the present application cannot receive a patent based on the stipulations of Art. 29, para. 2 of the Japanese Patent Law.

(2) However, the gist of the present invention, as described in amended claim 1 in the attached Procedural Amendment, is characterized in having a guard, a cap, and a group of a first, a second and a third blade with parallel sharpened edges located between the guard and cap, the first blade defining the edge nearest the guard having an exposure of a negative value that is not less than -0.2mm , and the third blade defining the edge nearest the cap having an exposure of a positive value not greater than $+0.2\text{mm}$ and the second blade has an exposure not less than the exposure of the first blade and not greater than the exposure of the third blade.

Here, the exposure of the blade is defined as the perpendicular distance or height of the blade edges measured from a plane tangential to skin engaging surfaces of the most forward and most rearward blade edges to be measured in the safety razor unit. Then, the present invention is characterized in that the exposure of the primary blade edge 11 that is, the distance from a tangential plane connecting the skin contacting surface of the guard 2 to the blade edge of the secondary blade 12 to the blade edge of the primary blade 11 is a negative value of over -0.2mm , the exposure of the tertiary blade 13, that is, the distance from a tangential plane connecting the skin contacting surface of the cap 3 to the blade edge of the secondary blade 12 to the blade edge of the tertiary blade 13 is a positive value of up to $+0.2\text{mm}$, and the exposure value of the secondary blade 12, that is the distance from a tangential plane connecting the blade edge of the primary blade 11 to the blade edge of the tertiary blade 13 to the blade edge of the secondary blade 12 is between the exposures of the primary and tertiary blades.

(3) In contrast, Cited Reference 1 describes that two blade bodies 4 and 5 are interspersed between guide surfaces 9, 10 and 11, the guides forming a shaving tangential plane P, with the lower blade body 4 and upper blade body 5 being inclined with respect to this tangential plane P. In particular, as shown in Fig.3, the edge 4a of lower blade body 4 is retracted a little behind the tangential plane P by a distance of only L1 and the edge 5a of upper blade body 5 is protruded a little in front of the tangential plane P by a distance of only L2.

Also, Cited Reference 2 only shows three blades 3, 4, and 5 being arranged parallel to each other between a cap 6 and plate 7, with the edge of the front blade being positioned to extend in front of the next higher blade. That is, this only shows the edge of the first blade 5 is positioned in front of the next higher blade 4, and the edge of blade 4 positioned ahead of the next higher blade 3, and does not define the exposure of each blade

Further, Cited Reference 3 merely shows a razor unit that has an open frame holding at least one blade, wherein the edge of the blade is positioned a specified distance away from the surface of the frame in order to form a guard surface for the blade edge. This razor is formed so that three blades 12, 13, and 14 are positioned at an angle in parallel to each other, the beard being able to pass through each blade and shaving cream being able to pass between the blade edges and through the frame.

Here, Reference 1 is different from construction of the present invention, especially the inventions of claims 1 and 10 and there is nothing described therein

from which such a construction can be conceived. This reference concerns a 2 bladed razor and there is no geometrical limitation which would allow one to conceive of applying this construction to a 3 bladed razor. Also, this reference does not have anything suggesting that the blade nearest the guard has an exposure of less than zero and the blade nearest the cap has an exposure of greater than zero. Specifically, this reference merely describes that the exposure of the two blades 4, 5 are measured in relation to the tangential plane P formed by the guide surfaces 9, 10 and 11.

In the present invention, as noted above, the exposure of the blade is defined as the perpendicular distance or height of the blade edges measured from a plane tangential to skin engaging surfaces of the most forward and most rearward blade edges to be measured in the safety razor unit. And then, in a razor unit having 3 blades, the exposure of the primary blade is measured by the amount of protrusion from the tangential plane connecting the skin contacting surface of the guard to the blade edge of the secondary blade, and the exposure of the tertiary blade is measured by the amount of protrusion from the tangential plane connecting the skin contacting surface of the cap to the blade edge of the secondary blade. In contrast, the invention of Reference 1 is measured based on a common plane, and the only geometrical limitation on blade construction is that the blade edges are aligned along a common plane, not about changing the drag force of each blade when the razor unit is being pulled along the shaving surface.

In contrast to this, the present invention is directed to obtaining a 3 bladed razor unit where the first and third blades are correctly arranged at an exposure in relation to the nearest skin contact surface, where increases in the friction along the razor surface arising from multiple blades can be overcome, without uncomfortable sensations and with the most appropriate contact on the skin. From this, it can be seen that the present invention shows sufficient novelty over that described in the reference.

Further, References 2 and 3 also have a construction different from the razor of the present invention, and there are no descriptions suggesting construction of the present invention. In particular, there are no descriptions in Cited References 2 or 3 whatsoever about exposure values, as these merely relate to 3 bladed units. Additionally, Cited References 1 and 2 describe absolutely nothing about geometrical dimensions when using 3 blades without sacrificing shaving comfort. It is also impossible to achieve the razor of the present invention even by somehow applying the 3 blades of cited references 2 and 3 to the device of cited reference 1. Further, even though the examiner pointed out that cited references 2 and 3 show the points of the blade defining the edge nearest the guard has a negative exposure value and the blade defining the edge nearest the cap has a positive exposure value, but the figures are not dimensionally correct and further there are no descriptions about negative and positive exposure of multiple blades.

(4) As explained above, the inventions described in cited references 1, 2 and 3 are not provided with a construction where shaving comfort can be improved by stipulating the exposure of each blade in a razor having 3 blades as in the present invention.

Accordingly, the construction of the present invention is different from each cited reference and further, it is impossible to conceive of the construction of the present invention even with some combination of the matter described in each of the references. Consequently, it is felt that the present invention cannot be easily invented from the descriptions of each cited reference.

Procedural Amendment

May 27, 2002

Commissioner of JPO

- 1. INDICATION OF CASE** Heisei 7 Patent Application No. 510376
- 2. TITLE OF INVENTION** Safety Razor
- 3. AMENDANT** The Gillette Company
- 4. AGENT**
Kyowa Patent and Law Office
2-3 (Fuji Bldg) Marunouchi 3-Chome
Chiyoda-ku, Tokyo
[Tel. Tokyo (3211)2321]
6428 Patent Attorney Kazuo Satou
- 5. DATE OF AMENDMENT NOTICE** date of mailing
- 6. NUMBER OF CLAIMS REDUCED BY AMENDMENT** 2
- 7. AMENDED DOCUMENTS** SPECIFICATION, CLAIMS
- 8. AMENDED PARAGRAPHS** SPECIFICATION, CLAIMS
- 9. CONTENTS OF AMENDMENT** SPECIFICATION AND CLAIMS FULLY
AMENDED AS IN THE ATTACHED
DOCUMENTS

SCH 036269

SPECIFICATION

Safety Razor

This invention is concerned with safety razors, and relates in particular to safety razors having blade units with a plurality of blades defining parallel sharpened edges arranged to pass in turn over a skin surface being shaved. As well known in the art blade units may be permanently attached to a razor handle or take the form of detachable cartridges intended to be replaced when the blade edges have become dulled. In either type of razor the blade unit may be fixed in position on the handle or pivotable about an axis parallel to the blade edges. The invention disclosed herein is applicable to all these forms of blade unit.

Safety razors having blade units with two blades have in recent years been sold in very large numbers and are generally acknowledged to give a better quality of shave, especially in terms of closeness, than single bladed razors. Furthermore, over the years there have been many written proposals to provide safety razors with several blades. A blade unit having many blades can produce a more complete shave than a similar blade unit with only one or two blades. However, a feeling of a complete shave ~~obtained~~ is only one parameter by which razor users judge the performance of a razor. Adding extra blades can have a serious detrimental influence on other blade unit characteristics, most notably the drag forces experienced when the blade unit is moved over the skin, with the consequence that the overall performance of the blade unit can be markedly inferior despite a more complete shave being obtainable. As a result, to our knowledge no razors with blade units incorporating more than two blades have been successfully marketed to date.

It has been found that with a blade unit comprising three blades, the frictional drag forces can be kept at an acceptable level while allowing an improved shaving efficiency, by setting the blades relative to each other and to guard and cap surfaces positioned in front of and behind the blade edges, according to a particular geometrical disposition. Thus, in accordance with the present invention there is provided a safety razor blade unit comprising a guard, a cap and a group of three blades with parallel sharpened edges located between the guard and cap, the first blade defining the edge nearest the guard having an exposure not greater than zero, and the third blade defining the blade nearest the cap having an exposure not less than zero.

The invention is not limited to blade units in which the blades are rigidly mounted in fixed position relative to the guard and/or cap. If the blades are capable of movement through a spring then the geometric parameters stipulated herein are those which apply when the blades are in their normal rest positions.

The blade exposure is defined to be the perpendicular distance or height of the blade edge measured with respect to a plane tangential to the skin contacting surfaces of the blade unit elements next in front of and next behind the edge measured. Therefore, for the three bladed blade unit of the invention, the exposure of the first or primary blade is measured with reference to a plane tangential to the guard and the edge of the second blade, and the exposure of the third or tertiary blade is measured with reference to a plane tangential to the edge of the Second blade and the cap.

It is preferred that the primary blade has a negative exposure, i.e. is located below the relevant tangent plane, and the tertiary blade a positive exposure, i.e. is located above the relevant tangent plane. This arrangement has the effect of tending

to equalize the shaving effects performed by the respective blades, since in a multiple blade razor the leading blade has a tendency to do most of the work. Of course the exposure of the primary blade must not be so low that it will not make effective contact with the skin surface being shaved. The minimum acceptable exposure will be influenced by other blade unit dimensions, such as the distance from the skin engaging surface of the guard to the edge, i.e. the span of the primary blade. As referred to herein, "the span" means the distance from the blade edge to the skin contacting element immediately in front of that edge as measured along a tangent line extending between the said element and the blade edge. Assuming the span is not large, i.e. not more than about 1.5mm, an exposure not less than -0.2mm can achieve satisfactory results for the primary blade. For a span of about 0.7mm an exposure of about -0.04mm has been found to be very appropriate for the primary blade. With the exposure of the primary blade being not greater than zero, the span should not be very small and a minimum span of about 0.5mm is therefore proposed. It is beneficial for the primary blade span to be smaller than, e.g. approximately half the span between the edges of the primary and secondary blades and the span between the secondary and tertiary blades.

Similarly, practical limitations will establish a maximum acceptable exposure for the tertiary blade. It should not be so great that the tertiary blade carries too high a risk of cutting the chin, for example. It is believed a maximum exposure of ~~around~~ +0.2mm will ensure satisfactory results. An appropriate span for the tertiary blade is in the range of 1.0 to 2.0mm, which is also applicable to the second blade.

The exposure of the ~~second or~~ secondary blade is preferably not less than the exposure of the primary blade and not greater than the exposure of the tertiary blade. A steadily increasing blade exposure has been found most effective. Therefore, the value of the exposure of the secondary blade is ideally approximately half way between the exposure values for the primary and tertiary blades, and very satisfactory test results have been obtained with all three blade edges lying in a common plane. In most embodiments a secondary blade exposure substantially equal to zero will be very satisfactory. We recommend that the tertiary blade exposure be a positive value equal in magnitude to the negative exposure of the primary blade. Another factor which can influence drag forces associated with the blades is the shaving angle, i.e. the angle between a plane bisecting the blade tip and the plane with respect to which the blade exposure is measured. However, the blade shaving angles are not critical and values within a broad range are acceptable, for example 19-28°. It is not necessary for all three blades to have the same shaving angles, and the most effective values may depend on the span and exposure selected for each blade. With a three-bladed safety razor blade unit having the blades disposed as specified herein we have found an enhanced overall shaving performance in comparison to a two-bladed razor.

Some specific embodiments of the invention are described below with reference to the accompanying drawings.

In each of Figures 1 and 2 there is illustrated a safety razor blade unit intended to be mounted on a razor handle. The blade unit may be permanently attached to the handle, e.g. in a disposable razor, or may be formed as a cartridge adapted to be mounted releasably to the handle. In either case the handle forms no part of the present invention and it does not need to be described further.

Each of the illustrated blade units has a frame 1 comprising a guard 2 and a cap 3. As shown the cap receives a lubricating strip 4 mounted on the frame. The strip may be of a form well known in the art. Carried by the frame are primary,

secondary and tertiary blades 11, 12, 13 having parallel sharpened edges. The blades may be supported firmly by the frame to remain substantially fixed in the positions in which they are depicted (subject to any resilient deformation which the blades undergo under the forces applied against the blades during shaving). Alternatively the blades may be supported for limited movement against spring restoring forces, e.g. in a downward direction as viewed in the drawings. The basic construction and assembly of the blade units are conventional, the novel aspects of the present invention residing in the provision of a three blades set provided in the blade unit set in particular dispositions with respect to each other and the guard and cap.

In the blade unit of Figure 1, the edges of all three blades lie in a common plane P, which plane is also tangential to the skin engaging surfaces of the guard 2 and the cap 3 and which therefore constitutes the "exposure plane" with respect to which the blade exposures are specified. In fact the exposure is equal to zero for each of the three blades 11, 12, 13. The span S1 of the primary blade 11 is from 0.5 to 1.5mm and is preferably substantially equal to 0.70mm. The span S2 of the secondary blade 12 and the span S3 of the tertiary blade 13 have values in the range of 1.0 to 2.0mm. They are shown equal with a value substantially equal to 1.50mm. The edge of the tertiary blade is at a distance S4 substantially equal to 1.80mm in front of the cap. To the extent that the primary blade has zero exposure and the tertiary blade also has zero exposure, this embodiment shows an arrangement in which the exposure values of both blades are at the limit proposed according to the present invention. Nonetheless the blade unit will produce very good shaving results in term of closeness of shave achieved with an acceptable overall performance taking into account all shaving characteristics.

As illustrated in Figure 1, all three blades have the same shaving angle A, but this is not essential. A more favourable blade arrangement is shown in Figure 2. The spans S1, S2, S3 and S4 are the same as those mentioned above for Figure 1. The primary blade edge 11 in the embodiment shown in Figure 2 has an exposure, that is, the distance from a tangential plane connecting the skin contacting surface of the guard 2 to the blade edge of the secondary blade 12 to the blade edge of the primary blade 11 of -0.04mm, the exposure, that is, the distance from a tangential plane connecting the blade edge of the primary blade 11 to the blade edge of the tertiary blade 13 to the blade edge of the secondary blade 12 is zero, the edges of all three blades lying in a common plane P as in Figure 1, and the exposure, that is, the distance from a tangential plane connecting the skin contacting surface of the cap 3 to the blade edge of the secondary blade 12 to the blade edge of the tertiary blade 13 is +0.06mm. Thus, there is a progressive increase in blade exposure from the leading blade 11 to the trailing blade 13.

With the embodiments of the invention the blade related drag forces to which the blade unit is subjected in use are reduced by choice of the blade exposure values, but at the same time it is ensured that an enhanced shaving efficiency is secured due to there being three sharpened blades.

CLAIMS

1. A safety razor blade unit comprising a guard, a cap, and a group of a first, a second and a third blade with parallel sharpened edges located between the guard and cap, the first blade defining the edge nearest the guard having an exposure of a negative value that is not less than -0.2mm , and the third blade defining the edge nearest the cap having an exposure of a positive value not greater than $+0.2\text{mm}$ and the second blade has an exposure not less than the exposure of the first blade and not greater than the exposure of the third blade.
2. A safety razor blade unit according to claim 1, wherein the span between the first blade edge and the guard is in the range of 0.5mm to 1.5mm
3. A safety razor blade unit according to claim 1, wherein the exposure of the first blade is substantially equal to -0.04mm .
4. A safety razor blade unit according to claim 1, wherein the span between the edge of the third blade and the edge of the second blade is in the range of 1.0 to 2.0mm .
5. A safety razor blade unit according to claim 1, wherein the span between the edge of the second blade and the edge of the first blade is in the range of 1.0 to 2.0mm .
6. A safety razor blade unit according to claim 1, wherein the span between the edges of the first and second blades and/or between the edges of the second and third blades is substantially equal to 1.5mm .
7. A safety razor blade unit according to claim 1, wherein the exposure of the second blade is substantially equal to zero.
8. A safety razor blade unit according to claim 1, wherein the exposure of the third blade has a positive value substantially equal in magnitude to the negative value of the exposure of the first blade.
9. A safety razor blade unit according to any one of claims 1 to 8, wherein the span between the first blade edge and the guard is substantially smaller than the span between the edges of the first and second blades and the span between the edges of the second and third blades.
10. A safety razor blade unit comprising a guard, a cap, and a group of a first, a second and a third blade with parallel sharpened edges located between the guard and cap, each spring being provided to be resiliently movable against a spring force from a rest position from which they cannot be moved by said spring force, the first blade defining the edge nearest the guard having an exposure of a negative value that is between about -0.04mm to -0.06mm , the third blade defining the edge nearest the cap having an exposure of a positive value that is between about $+0.04\text{mm}$ to $+0.06\text{mm}$ and the second blade has an exposure of zero at said rest position, when the blade exposure is defined as the perpendicular distance of the blade edges measured from a plane tangential to skin engaging surfaces of the most forward and most rearward blade edges to be measured in the safety razor unit.

[document name] Final Rejection
[patent] H07-510376 (Sep. 22, 1994)

[mailing date] Jul. 16, 2002
[issue no.] 229402 pg. 1/1

Final Rejection

Patent Application Number: Heisei 7 Patent Application No. 510376
Issue Date: July 10, 2002
JPO Examiner: Yoshifumi Saeki 7613 3C00
Title of Invention: Safety Razor
Patent Applicant: The Gillette Company
Patent Agent for Applicant: Kazuo Satou (& 3 others)

The present application should be rejected for the reasons given in the Preliminary Rejection of Nov. 19, 2001.

Further, even though contents of the Argument and Amendment were studied, no grounds worthy of overcoming the Reasons for Rejection could be found.

Note

Claims 1-10

The above claims only limit the exposure value of the blades, so the inventions are merely numerical limitations.

Further, although Cited Reference 1 relates to 2 blades, numerically limiting for well known 3 bladed razors as in the present invention is found to be achievable by those skilled in the art according to necessity.

Division Head/Rep	Chief Examiner/Rep.	Examiner	Assistant Examiner
	Ichiro Horikawa	Yoshifumi Saeki	
	8325	7613	

SCH 036274

[document name] Appeal Request
[patent] H07-510376

[receipt date] Oct. 15, 2002
pg. 1/2

[NAME OF DOCUMENT] Appeal Request

[REFERENCE NUMBER] 10441180

[FILING DATE] October 15, 2002

[ADDRESSEE] Commissioner of the Patent Office

[INDICATION OF APPEAL CASE]

[APPLICATION NUMBER] Heisei 7 Patent Application No. 510376

[TYPE OF APPEAL] Appeal against Final Rejection

[NUMBER OF CLAIMS] 10

[APPELANT]

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SCH 036275

[document name] Appeal Request
[patent] H07-510376

[receipt date] Oct. 15, 2002
pg. 2/2

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[INDICATION OF FEES]

[PREPAID ACCOUNT NO.] 087654

[FEES PAID] 104,500 YEN

[GIST OF REQUEST]

Withdrawal of original Final Rejection. Seek an
Appeal Decision finding that the present
application should be patented

[REASON FOR REQUEST]

Detailed reasons will be filed later

SCH 036276

[document name] Procedural Amendment (formality)
[patent] H07-510376 (Sep. 22, 1994)

[receipt date] Dec. 11, 2002
pg. 1/1

[NAME OF DOCUMENT] Procedural Amendment (formality)

[REFERENCE NUMBER] 10441188

[FILING DATE] December 11, 2002

[ADDRESSEE] Chief Appeal Examiner

[INDICATION OF CASE]

[APPEAL NUMBER] Fufuku No.2002-20069

[APPLICATION NUMBER] Heisei 7 Patent Application No. 510376

[AMENDANT]

[ID CODE] 593093249

[NAME OR TITLE] The Gillette Company

[AGENT]

[ID CODE] 100075812

[PATENT ATTORNEY]

[NAME OR TITLE] Kenji Yoshitake

[PROCEDURAL AMENDMENT 1]

[DOCUMENT SUBJECT TO AMENDMENT] Appeal Request

[PARAGRAPH SUBJECT TO AMENDMENT] List of Appended Docs.

[METHOD OF AMENDMENT] Addition

[CONTENT OF AMENDMENT] 1

SCH 036277

[doc. name] Designation of Appeal Examiners (change) Notice

[patent] H07-510376

[issue no.] 009460 pg. 1/1

Notice of Names of Appeal Examiners and Secretary

Feb. 3, 2003

Commissioner of JPO

APPEAL NUMBER

Fufuku 2002-20069

(Application Number)

(Heisei 7 Pat. Application No. 510376)

Appellant

The Gillette Company

Patent Agent for Appellant:

Kenji Yoshitake (& 6 others)

In regard to the present Appeal, you are notified that the following Appeal Examiners and Appeal Secretary are designated (changed).

Chief Appeal Examiner

Appeal Examiner T. Kobayashi

Appeal Examiner M. Koike

Appeal Examiner Y. Miyazaki

Appeal Secretary N. Takachi

Appeal Secretary H. Uchiyama 7545

SCH 036278

[doc. name] Instructions for procedural amendment (request) (Chief Appeal Examiner)

[patent] H07-510376

[mailing no.] 009461 pg. 1/1

Instructions for Procedural Amendment (Formality)

Appeal Request Number: Fufuku 2002-20069
(Patent Application Number): (Heisei 7 Patent Application No. 510376)
Draft Date: Feb. 3, 2003
Chief Appeal Examiner JPO Appeal Examiner:
Takeshi Kobayashi
Appellant: The Gillette Company
Patent Agent for Appellant: Kenji Yoshitake (& 6 others)

The present Request for Appeal has formality deficiencies, so a Procedural Amendment (formality) amending the matters listed below must be submitted within 30 days of the dispatch of these Instructions.

If a procedural amendment is not filed within the above allotted time, the Request for Appeal will be dismissed according to the stipulations of Art. 133, para. 3 of the Patent Law.

Note

1. A document in which the heading (Reasons for the Request) in the Request for Appeal is correctly filled out.

(note) The column under the heading (Reasons for the Request) does not describe actual reasons. Please enter actual reasons for the request.

Chief Appeal Examiner	Appeal Examiner	T. Kobayashi	7226
	Appeal Examiner	A. Miyazaki	7536
	Appeal Examiner	M. Koike	6925
	Appeal Secretary	H. Uchiyama	7545

SCH 036279

[document name] Procedural Amendment (formality)
[patent] H07-510376 (Sep. 22, 1994)

[receipt date] March 5, 2003
pg. 1/1

[NAME OF DOCUMENT] Procedural Amendment (formality)

[REFERENCE NUMBER] 10441181

[FILING DATE] March 5, 2003

[ADDRESSEE] Chief Appeal Examiner

[INDICATION OF CASE]

[APPEAL NUMBER] Fufuku 2002-20069

[APPLICATION NUMBER] Heisei 7 Patent Application No. 510376

[AMENDANT]

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[NAME OR TITLE] Kenji Yoshitake

[DISPATCH NUMBER] 009461

[PROCEDURAL AMENDMENT 1]

[DOCUMENT SUBJECT TO AMENDMENT] Appeal Request

[PARAGRAPH SUBJECT TO AMENDMENT] Reasons for Request

[METHOD OF AMENDMENT] Exchange

[CONTENT OF AMENDMENT] 1

[PROOF REQUIRED] Yes

SCH 036280

[amendment no.] 001 [subject document] Appeal Request

[patent] H07-510376 (Sep. 22, 1994) [subject paragraph] Reasons for Request

exchanged pg. 1/7

[Reasons for Request]

(1) Prosecution History

Application	March 29, 1996
Notice of Preliminary Rejection	November 27, 2001
Argument	May 27, 2002
Procedural Amendment	May 27, 2002
Final Rejection	July 10, 2002
Mailing Date of above	July 16, 2002
Request for Appeal	October 15, 2002

(2) Major Points of Final Rejection

(a) The reasons of the present final rejection stated that the present invention can be easily invented by those having common knowledge in the art to which this invention pertains, based on JP Pat Pub. 63-52911 (Cited Reference 1), JP UM App. No. 56-184343 (Cited Reference 2) and USP 4,200,976 (Cited Reference 3) based on the stipulations of Art. 29, para. 2 of the Japanese Patent Law.

(b) This reason stated that the inventions related to each of the claims of the present application merely define the exposure value of the blades and are merely numerical limitations. Further, although Cited Reference 1 has 2 blades, limitation of the values for commonly known 3 blades is merely a matter that can be appropriately selected by those skilled in the art according to need.

(3) Reasons Why Present Invention Should be Allowed

1. Explanation of the Present Invention

The invention of Claim 1 relates to a safety razor unit comprising a guard, a cap, and a group of a first, a second and a third blade with parallel sharpened edges located between the guard and cap in which the first blade defining the edge nearest the guard having an exposure of a negative value that is not less than -0.2mm, and the third blade defining the edge nearest the cap having an exposure of a positive value not greater than +0.2mm and the second blade has an exposure not less than the exposure of the first blade and not greater than the exposure of the third blade.

SCH 036281

Further, the invention of claim 10 relates to a safety razor blade unit comprising a guard, a cap, and a group of a first, a second and a third blade with parallel sharpened edges located between the guard and cap, each blade is provided to be resiliently movable against a spring force from a rest position from which they cannot be moved by said spring force, the first blade defining the edge nearest the guard having an exposure of a negative value that is between about -0.04mm to -0.06mm, the third blade defining the edge nearest the cap having an exposure of a positive value that is between about +0.04mm to +0.06mm and the second blade has an exposure of zero at said rest position, when the blade exposure is defined as the perpendicular distance of the blade edge measured from a plane tangential to the skin contacting surfaces of the blade elements just forward and just rearward of blade edge to be measured.

As stated above, the present invention relates to a safety razor unit having a guard, blade and cap, wherein said guard comes in contact with and pulls the skin in front of the blade, and the cap comes in contact with the skin in continuity with the blade. In Figure 1 of the present invention, the guard is indicated by 2, the blades are indicated by 11, 12 and 13, and the cap is indicated by 4.

Generally speaking, the elements indicated in Figure 1 take the form of a plastic cartridge comprising the guard and the cap and keeping the blades in a predetermined position. When in use, the unit shown in Figure 1 moves from right to left in relation to the skin in the context of said figure.

In a unit such as this, the position of the blade in relation to the other blades, the guard and the cap is determined by the exposure value of the blade edge and the span of the blade edge, and their dimensions have an affect on shaving comfort and shaving condition.

The exposure value of the blade is defined by the perpendicular height of the blade edge of the blade to be measured in relation to a plane tangential to the skin contacting surface of the blade unit elements directly in front of and directly behind the blade edge of the blade to be measured, as described in Page 2 lines 7 to 9 of the specifications. Additionally, the "span" refers to the distance from the blade edge to the skin contacting element directly in front of said blade edge, which is measured along a tangent line

extending between the blade edge and the blade unit elements just in front of and just behind said blade edge, as described on Page 2 lines 20 to 22.

Incidentally, as described on Page 1 lines 11 to 21, safety razors having two blades have been sold in significantly large numbers recently and are believed to provide a more comfortable shave than a single-bladed razor in terms of closeness. Furthermore, there have been many proposals over the years to provide safety razors with multiple blades. Razors with multiple blades can deliver a closer shave than a similar blade unit with only one or two blades. However, closeness of shave obtained is only one parameter by which razor users judge the performance of a razor. Adding extra blades can have a serious detrimental influence on other blade unit characteristics, most notably the drag forces experienced when the blade unit is moved over the skin, with the consequence that the overall performance of the blade unit can be markedly inferior despite a closer shave being obtainable. As a result, to our knowledge no razors with blade units incorporating more than two blades have been successfully marketed to date.

To that end, the inventor of the present invention has strived to develop a three-bladed razor blade unit, and discovered that desirable results can be obtained by providing the first blade of said unit with a negative exposure value, the third blade with a positive exposure value, and the second blade with an exposure value between those of the first and third blades.

In other words, as described in Claim 1, it was deemed highly suitable that the first blade have a negative exposure value no less than -0.2mm , the third blade have a positive exposure value no greater than 0.2mm , and that the second blade have an exposure value larger than that of the first blade and smaller than that of the third blade. In particular, as described in Claim 10, it was deemed that decreased drag in addition to enhanced shaving quality could be achieved by providing a razor blade unit wherein the first blade has a negative exposure value between -0.04mm and -0.06mm , the third blade has a positive exposure value between $+0.04$ and $+0.06\text{mm}$, and the second blade has an exposure value of approximately 0, and wherein each blade is provided to be resiliently movable against a spring force from a rest position from which they cannot be further moved by said spring force.

2. Explanation of the References

Cited Reference 1 discloses a razor blade unit wherein two blades 4 and 5 are positioned between guide surfaces 9, 10 & 11. The guide surfaces form the shaving tangential plane P and lower blade 4 and upper blade are inclined in relation to said tangential plane P. Blade edge 4a of blade 4, which is closest to the guard, is located slightly behind tangential plane P by a distance of only L1, while blade edge 5a of blade 5, which is closest to the cap, is located in front of tangential plane P by a distance of only L2.

Cited Reference 2 only describes that three blades 3, 4 & 5 are positioned parallel to each other between a head plate 6 and blade-receiving plate 7, with the blade edge of foremost blade 5 protruding forward more than blade 4 which is positioned above it, and the edge of blade 4 similarly protruding to protrude forward of the edge of blade 3.

The invention of Reference 3 is merely a razor blade unit having an open frame which supports at least one blade, and has a blade edge positioned a predetermined distance from a surface of said frame so that a guard surface for said blade edge is formed. The razor blade has inclined blades 12, 13 and 14 positioned parallel to each other, and is formed such that the shavings can pass through each blade and the shaving agent can pass between the blade edges and through the frame.

3. Comparison of the Present Invention and the Cited References

When comparing the present invention and the references, it can be seen that Reference 1 is different to the structure described in Claims 1 and 10, and that Reference 1 in no way suggests said structure. Reference 1 relates to a razor having two blades and there is no suggestion of a geometrical limitation to its structure so as to fit three blades. Reference 1 does describes that the blade closest to the guard has an exposure value no greater than zero, and that blade close to the cap has an exposure value no less than zero. Put simply, The invention of Reference 1 has two blades, wherein the second blade has an exposure value greater than that of the first blade.

However, there is no suggestion whatsoever that Reference 1 utilizes three blades. In particular, there is no description as to what position the third blade occupies in relation to the first blade and second blade, and it is

completely unclear as to whether the third blade is positioned forward of the other two blades, between the other two blades, or behind the other two blades. There is also no suggestion as to the exposure value of an added third blade.

Furthermore, the exposure values described in the present invention are not the same as those described in Reference 1. As previously mentioned, the exposure value of the blade is defined by the perpendicular height of the blade edge of the blade to be measured in relation to a plane tangential to the skin contacting surface of the blade unit elements directly in front of and directly behind the blade edge of the blade to be measured. Put simply, in the three-bladed razor unit of the present invention, the exposure value of the first blade is measured tangentially in relation to the surface in contact with the guard and the blade edge of the second blade, and the exposure value of the third blade is measured tangentially in relation to the surface in contact with the edge of the second blade and the cap.

Contrarily in Reference 1, (the exposure values) are measured based on a common flat surface, such that the unit's structure differs depending on whether or not the blade edge is forward of said flat surface, and no attempt is made to alter the drag force produced by each blade in response to the razor unit being drawn along the shaving surface. In addition, there is no description in Reference 1 to suggest a specific value for an exposure value of a blade edge.

The previously-mentioned structure of the present invention enables a three-bladed razor unit wherein the exposure values of the first blade and the third blade are accurately distributed in relation to the adjoining skin-contacting surfaces, and wherein the existence of multiple blades does away with increased friction along the shaved surface thereby delivering a comfortable shave with optimal skin contact. As such, the present invention demonstrates sufficient inventive step in relation to Reference 1.

Furthermore, while References 2 & 3 do relate to a three-bladed unit, their structures differ to the razor of the present invention and do not suggest its above-mentioned structure. In particular, References 2 & 3 contain absolutely no description of blade exposure values.

Referring to the figures of References 2 & 3, the Examiner points out that the blades which form the blade edges closest to the guards have negative exposure values, while the blades which form the blade edges closest to the caps have positive exposure values. However, the dimensions of these figures are not accurately described, and even assuming that they were accurately described, the razor blade exposure values are extremely small and can not be determined by the figures alone. Accordingly, the complete lack of descriptions as to the limits of the negative or positive exposure values of the multiple blades make it impossible to infer that the blades which form the blade edges closest to the guards have negative exposure values, and that the blades which form the blade edges closest to the caps have positive exposure values.

In addition, it would not be possible to achieve the invention described in Claims 1 & 10 of the present invention merely by adding a third blade as described in References 2 & 3. As stated above, if a third blade was added to the invention of Reference 1, there could be a number of different structures depending on the position, alignment, slope and exposure value of said blade. Furthermore, the addition of a third blade would alter the geometry of the razor blade device and influence the shaving effect. Therefore, in order to obtain an efficient, improved razor blade device such as that of the present invention, prior art which suggests the above structure is required because a structure like the one described in Claims 1 & 10 is not arbitrary nor is it obvious.

Applying the descriptions in Reference 2 & 3 to Reference 1, there is no evidence to back up the theory that a two-bladed system can easily be transformed into a three-bladed system, and there is no reason for those skilled in the art to infer that the operation of a two-bladed razor can be automatically applied to a three-bladed razor. Furthermore, even if one attempted to apply the description of Reference 1 to Reference 2 etc, they would still contain absolutely no suggestion as to the previously mentioned special exposure values of the present invention.

4. Conclusion

As explained above, the present invention and its structure differ from those of each of the references, and none of the references contains any suggestion of the present invention.

[amendment no.] 001 [subject document] Appeal Request

[patent] H07-510376 (Sep. 22, 1994) [subject paragraph] Reasons for Request

exchanged pg. 7/7

Therefore, it is impossible to achieve the structure of the present invention regardless of how any of the references are combined, and the present invention could not be simply invented from any of the references. Therefore, the applicant seeks to have the final rejection cancelled and the invention of the subject application allowed for patent.

SCH 036287

Notice of Names of Appeal Examiners and Secretary

Apr. 2, 2003

APPEAL NUMBER	Fufuku 2002-20069
(Application Number)	(Heisei 7 Pat. Application No. 510376)
Appellant	The Gillette Company
Patent Agent for Appellant:	Kenji Yoshitake (& 6 others)

In regard to the present Appeal, you are notified that the following Appeal Examiners and Appeal Secretary are designated (changed).

Chief Appeal Examiner	Appeal Examiner T. Kobayashi
	Appeal Examiner M. Koike
	Appeal Examiner Y. Miyazaki
	Appeal Secretary Y. Yamada

Appeal Secretary Y. Yamada 1726

SCH 036288

Notice of Names of Appeal Examiners and Secretary

Apr. 30, 2003

APPEAL NUMBER	Fufuku 2002-20069
(Application Number)	(Heisei 7 Pat. Application No. 510376)
Appellant	The Gillette Company
Patent Agent for Appellant:	Kenji Yoshitake (& 6 others)

In regard to the present Appeal, you are notified that the following Appeal Examiners and Appeal Secretary are designated (changed).

Chief Appeal Examiner	Appeal Examiner	Y. Nishigawa
	Appeal Examiner	A. Mihara
	Appeal Examiner	T. Kamizaki
	Appeal Secretary	Y. Yamada

Appeal Examiner T. Kamizaki 9037

SCH 036289

Notice of Preliminary Rejection

Appeal Request Number: Fufuku 2002-20069
(Patent Application Number): (Hei 7 Patent Application No. 510376)
Issue Date: April 30, 2003
Chief Appeal Examiner JPO Appeal Examiner:
Yoshio Nishikawa
Appellant: The Gillette Company
Patent Agent for Applicant: Kenji Yoshitake (& 6 others)

The application of the present appeal case, as a result of an appeal board meeting, is found to be unpatentable for the following reasons. If there are any arguments in regard to those reasons, an Argument must be submitted within 3 months of the issue of this Notice.

Reasons

The descriptions of the present claims have the following defects and do not meet the stipulations of Art. 36, 6-2 of the Patent Law.

Note

The invention of claim 1 does not define "exposure", so exposure cannot be specified. For example, can this be said to be the definition of exposure given in claim 10 or is it some other definition (perhaps, this should be defined as it is in claim 10).

In claim 10, in the description "blade edges measured from a plane tangential to skin engaging surfaces of the most forward and most rearward blade edges to be measured in the safety razor unit" the term "skin engaging surfaces" is unclear, the term "plane tangential to skin engaging surfaces" cannot be defined, so the claim is unclear. For example, there are two planes shown by dotted lines in Fig. 2, but it is unclear which of these shows the "skin engaging surfaces", and if both of them do, then the reference surface for the exposure will change and the definition of exposure becomes unclear. (wouldn't it be sufficient to define it as shown in Reference 1 (Pat. Pub. No. 63-52911) cited in the rejection of Nov. 19, 2001, where the surface P is defined as the plane linking the guard and the cap).

Further,

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1) If the specification is amended, please indicate amended portions with

underlines (Implementing Regulation No. 13, note 6)

2) When amending, please be careful not to add any new matter and indicate portions in the description of the originally filed application that support the amendments in an Argument.

Chief Appeal Examiner	Appeal Examiner	Y. Nishigawa	7438
	Appeal Examiner	A. Mihara	6965
	Appeal Examiner	T. Kamizaki	9037

SCH 036291

[patent] H07-510376

[receipt date] Aug. 4, 2003

pg. 1/E

[NAME OF DOCUMENT] Request for Extension of Time

[REFERENCE NUMBER] 10441188

[FILING DATE] Aug. 4, 2003

[ADDRESSEE] Commissioner of the Patent Office

[INDICATION OF CASE]

[APPEAL NUMBER] Fufuku 2002-20069

[APPLICATION NUMBER] Heisei 7 Patent Application No. 510376

[NUMBER OF CLAIMS] 10

[APPELLANT]

[ID CODE] 593093249

[NAME OR TITLE] The Gillette Company

[AGENT]

[ID NUMBER] 100075812

[PATENT ATTORNEY]

[NAME OR TITLE] Kenji Yoshitake

[ISSUE NUMBER] 100075812

[CONTENT OF REQUEST] In regard to the above appeal, as the Argument due August 2nd has not yet been fully prepared, a 3-month extension of the above period is requested.

[INDICATION OF FEES]

[PREPAID ACCOUNT NO.] 087654

[FEES PAID] 2,100 YEN

SCH 036292

[NAME OF DOCUMENT] Procedural Amendment
[REFERENCE NUMBER] 10441104
[FILING DATE] October 30, 2003
[ADDRESSEE] Chief Appeal Examiner
[INDICATION OF CASE]
 [APPEAL NUMBER] Fufuku 2002-20069
 [APPLICATION NUMBER] Heisei 7 Patent Application No. 510376
[AMENDANT]
 [ID CODE] 593093249
 [NAME OR TITLE] The Gillette Company
[AGENT]
 [IDENTIFICATION NUMBER] 100075812
 [PATENT ATTORNEY]
 [NAME OR TITLE] Kenji Yoshitake
[DISPATCH NUMBER] 036569
[PROCEDURAL AMENDMENT 1]
 [DOCUMENT SUBJECT TO AMENDMENT] Specification
 [PARAGRAPH SUBJECT TO AMENDMENT] Complete Text
 [METHOD OF AMENDMENT] Exchange
 [CONTENT OF AMENDMENT]
[DOCUMENT TITLE] Specification
[TITLE OF INVENTION] Safety Razor
[PATENT CLAIMS]

1. A safety razor blade unit comprising a guard, a cap, and a group of a first, a second and a third blade with parallel sharpened edges located between the guard and cap, the first blade defining the edge nearest the guard having an exposure of a negative value that is not less than -0.2mm, and the third blade defining the edge nearest the cap having an exposure of a positive value not greater than +0.2mm and the second blade has an exposure not less than the exposure of the first blade and not greater than the exposure of the third blade, when the blade exposure is defined as the distance in a perpendicular direction of the measured blade edge from a plane tangential to the members of the razor unit just forward and rearward of blade edges to be measured.
2. A safety razor blade unit according to claim 1, wherein the span between the first blade edge and the guard is in the range of 0.5mm to 1.5mm
3. A safety razor blade unit according to claim 1, wherein the exposure of the first blade is substantially equal to -0.04mm.
4. A safety razor blade unit according to claim 1, wherein the span between the edge of the third blade and the edge of the second blade is in the range of 1.0 to 2.0 mm.
5. A safety razor blade unit according to claim 1, wherein the span between the edge of the second blade and the edge of the first blade is in the range of 1.0 to 2.0 mm.
6. A safety razor blade unit according to claim 1, wherein the span between the edges of the first and second blades and/or between the edges of the second and third blades is substantially equal to 1.5 mm.
7. A safety razor blade unit according to claim 1, wherein the exposure of the second blade is substantially equal to zero.
8. A safety razor blade unit according to claim 1, wherein the exposure of the third blade has a positive value substantially equal in magnitude to the negative value of the exposure of the first blade.

9. A safety razor blade unit according to any one of claims 1 to 8, wherein the span between the first blade edge and the guard is substantially smaller than the span between the edges of the first and second blades and the span between the edges of the second and third blades.

10. A safety razor blade unit comprising a guard, a cap, and a group of a first, a second and a third blade with parallel sharpened edges located between the guard and cap, each spring being provided to be resiliently movable against a spring force from a rest position from which they cannot be moved by said spring force, the first blade defining the edge nearest the guard having an exposure of a negative value that is between about -0.04mm to -0.06mm, the third blade defining the edge nearest the cap having an exposure of a positive value that is between about +0.04mm to +0.06mm and the second blade has an exposure of zero at said rest position, when the blade exposure is defined as the distance in a perpendicular direction of the measured blade edge from a plane tangential to the skin contacting surfaces of the members of the razor unit just forward and rearward of blade edge to be measured

[Detailed Description of the Invention]

[0001]

[Technical Field of the Invention]

This invention is concerned with safety razors, and relates in particular to safety razors having blade units with a plurality of blades defining parallel sharpened edges arranged to pass in turn over a skin surface being shaved.

[0002]

[Prior Art and Problem the Invention Aims to Solve]

As well known in the art blade units may be permanently attached to a razor handle or take the form of detachable cartridges intended to be replaced when the blade edges have become dulled. In either type of razor the blade unit may be fixed in position on the handle or pivotable about an axis parallel to the blade edges. The invention disclosed herein is applicable to all these forms of blade unit.

[0003]

Safety razors having blade units with two blades have in recent years been sold in very large numbers and are generally acknowledged to give a better quality of shave, especially in terms of closeness, than single bladed razors. Furthermore, over the years there have been many written proposals to provide safety razors with several blades. A blade unit having many blades can produce a more complete shave than a similar blade unit with only one or two blades. However, closeness of shave obtained is only one parameter by which razor users judge the performance of a razor. Adding extra blades can have a serious detrimental influence on other blade unit characteristics, most notably the drag forces experienced when the blade unit is moved over the skin, with the consequence that the overall performance of the blade unit can be markedly inferior despite a more complete shave being obtainable. As a result, to our knowledge no razors with blade units incorporating more than two blades have been successfully marketed to date.

[0004]

[Means to Solve the Problem]

It has been found that with a blade unit comprising three blades, the frictional drag forces can be kept at an acceptable level while allowing an improved shaving efficiency, by setting the blades relative to each other and to guard and cap surfaces positioned in front of and behind the blade edges, according to a particular geometrical disposition. Thus, in accordance with the razor blade unit of the present invention there is provided a safety razor blade having 5 unit members comprising a

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guard, a cap and a group of three blades with parallel sharpened edges located between the guard and cap, the first blade defining the edge nearest the guard having an exposure not greater than zero, and the third blade defining the blade nearest the cap having an exposure not less than zero.

[0005]

The invention is not limited to blade units in which the blades are rigidly mounted in fixed position relative to the guard and/or cap. If the blades are capable of movement through a spring then the geometric parameters stipulated herein are those which apply when the blades are in their normal rest positions.

[0006]

The blade exposure is defined to be the perpendicular distance or height of the blade edge measured with respect to a plane tangential to the skin contacting surfaces of the blade unit elements next in front of and next behind the edge measured. Therefore, for the three bladed blade unit of the invention, the exposure of the first or primary blade is measured with reference to a plane tangential to the guard and the edge of the second blade, and the exposure of the third or tertiary blade is measured with reference to a plane tangential to the edge of the second blade and the cap.

[0007]

It is preferred that the primary blade has a negative exposure, i.e. is located below the relevant tangent plane, and the tertiary blade a positive exposure, i.e. is located above the relevant tangent plane. This arrangement has the effect of tending to equalize the shaving effects performed by the respective blades, since in a multiple blade razor the leading blade has a tendency to do most of the work. Of course the exposure of the primary blade must not be so low that it will not make effective contact with the skin surface being shaved. The minimum acceptable exposure will be influenced by other blade unit dimensions, such as the distance from the skin engaging surface of the guard to the edge, i.e. the span of the primary blade. As referred to herein, "the span" means the distance from the blade edge to the skin contacting element immediately in front of that edge as measured along a tangent line extending between the said element and the blade edge. Assuming the span is not large, i.e. not more than about 1.5mm, an exposure not less than -0.2mm can achieve satisfactory results for the primary blade. For a span of about 0.7mm an exposure of about -0.04mm has been found to be very appropriate for the primary blade. With the exposure of the primary blade being not greater than zero, the span should not be very small and a minimum span of about 0.5mm is therefore proposed. It is beneficial for the primary blade span to be smaller than, e.g. approximately half the span between the edges of the primary and secondary blades and the span between the secondary and tertiary blades.

[0008]

Similarly, practical limitations will establish a maximum acceptable exposure for the tertiary blade. It should not be so great that the tertiary blade carries too high a risk of cutting the chin, for example. It is believed a maximum exposure of +0.2mm will ensure satisfactory results. An appropriate span for the tertiary blade is in the range of 1.0 to 2.0mm, which is also applicable to the second blade.

[0009]

The exposure of the secondary blade is preferably not less than the exposure of the primary blade and not greater than the exposure of the tertiary blade. A steadily increasing blade exposure has been found most effective. Therefore, the value of the exposure of the secondary blade is ideally approximately half way

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between the exposure values for the primary and tertiary blades, and very satisfactory test results have been obtained with all three blade edges lying in a common plane. In most embodiments a secondary blade exposure substantially equal to zero will be very satisfactory. We recommend that the tertiary blade exposure be a positive value equal in magnitude to the negative exposure of the primary blade. Another factor which can influence drag forces associated with the blades is the shaving angle, i.e. the angle between a plane bisecting the blade tip and the plane with respect to which the blade exposure is measured. However, the blade shaving angles are not critical and values within a broad range are acceptable, for example 19-28°. It is not necessary for all three blades to have the same shaving angles, and the most effective values may depend on the span and exposure selected for each blade. With a three-bladed safety razor blade unit having the blades disposed as specified herein we have found an enhanced overall shaving performance in comparison to a two-bladed razor.

[0010]

[Embodiments of the Invention]

Some specific embodiments of the invention are described below with reference to the accompanying drawings.

[0011]

In each of Figures 1 and 2 there is illustrated a safety razor blade unit intended to be mounted on a razor handle. The blade unit may be permanently attached to the handle, e.g. in a disposable razor, or may be formed as a cartridge adapted to be mounted releasably to the handle. In either case the handle forms no part of the present invention and it does not need to be described further.

[0012]

Each of the illustrated blade units has a frame 1 comprising a guard 2 and a cap 3. As shown the cap receives a lubricating strip 4 mounted on the frame. The strip may be of a form well known in the art. Carried by the frame are primary, secondary and tertiary blades 11, 12, 13 having parallel sharpened edges. The blades may be supported firmly by the frame to remain substantially fixed in the positions in which they are depicted (subject to any resilient deformation which the blades undergo under the forces applied against the blades during shaving). Alternatively the blades may be supported for limited movement against spring restoring forces, e.g. in a downward direction as viewed in the drawings. The basic construction and assembly of the blade units are conventional, the novel aspects of the present invention residing in the provision of a three blade set provided in the blade unit in particular dispositions with respect to each other and the guard and cap.

[0013]

In the blade unit of Figure 1, the edges of all three blades lie in a common plane P, which plane is also tangential to the skin engaging surfaces of the guard 2 and the cap 3 and which therefore constitutes the "exposure plane" with respect to which the blade exposures are specified. In fact the exposure is equal to zero for each of the three blades 11, 12, 13. The span S1 of the primary blade 11 is from 0.5 to 1.5mm and is preferably substantially equal to 0.70mm. The span S2 of the secondary blade 12 and the span S3 of the tertiary blade 13 have values in the range of 1.0 to 2.0mm. They are shown equal with a value substantially equal to 1.50mm. The edge of the tertiary blade is at a distance S4 substantially equal to 1.80mm in front of the cap. To the extent that the primary blade has zero exposure and the tertiary blade also has zero exposure, this embodiment shows an arrangement in which the exposure values of both blades are at the limit proposed according to the

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present invention. Nonetheless the blade unit will produce very good shaving results in term of closeness of shave achieved with an acceptable overall performance taking into account all shaving characteristics.

[0014]

As illustrated in Figure 1, all three blades have the same shaving angle A, but this is not essential. A more favourable blade arrangement is shown in Figure 2. The spans S1, S2, S3 and S4 are the same as those mentioned above for Figure 1. The primary blade edge 11 in the embodiment shown in Figure 2 has an exposure, that is, the distance from a tangential plane connecting the skin contacting surface of the guard 2 to the blade edge of the secondary blade 12 to the blade edge of the primary blade 11 of -0.04mm, the exposure, that is, the distance from a tangential plane connecting the blade edge of the primary blade 11 to the blade edge of the tertiary blade 13 to the blade edge of the secondary blade 12 is zero, the edges of all three blades lying in a common plane P as in Figure 1, and the exposure, that is, the distance from a tangential plane connecting the skin contacting surface of the cap 3 to the blade edge of the secondary blade 12 to the blade edge of the tertiary blade 13 is +0.06mm. Thus, there is a progressive increase in blade exposure from the leading blade 11 to the trailing blade 13.

[0015]

With the embodiments of the invention the blade related drag forces to which the blade unit is subjected in use are reduced by choice of the blade exposure values, but at the same time it is ensured that an enhanced shaving efficiency is secured due to there being three sharpened blades.

[0016]

[Effect of the Invention]

With the construction as noted above, the present invention can provide a complete shave as well as enhanced overall shaving performance.

[Brief Description of the Drawings]

[Fig. 1]

Figure 1 shows a schematic representation of a transverse cross-section through one exemplary embodiment of the invention

[Fig. 2]

Figure 2 shows a schematic representation of a transverse cross-section through the preferred embodiment of the invention.

[Explanation of the Reference Numerals]

- | | |
|----|-------------------|
| 1 | frame |
| 2 | guard |
| 3 | cap |
| 4 | lubricating strip |
| 11 | first blade |
| 12 | second blade |
| 13 | third blade |

[NAME OF DOCUMENT]	Submission of Publications, etc.
[FILING DATE]	October 16, 2003
[ADDRESSEE]	Commissioner of the Patent Office
[INDICATION OF CASE]	
[APPEAL NUMBER]	Fufuku 2002-20069
[APPLICATION NUMBER]	Heisei 7 Patent Application No. 510376
[SUBMITTEE]	
[ADDRESS]	Omitted
[NAME OR TITLE]	Omitted
[SUBMITTED PUBLICATIONS]	
	1. UM Laid Open No. 58-88974, 2. Patent Pub. 63-52911, 3. UM Pub No. 57-55812, 4. Patent Pub. No. 57-44354, 5. Patent Pub. No. 43-21696, 6. Patent Pub. No. 43-21697, 7. Patent Laid Open No. 50-102456, 8. Patent Pub. No. 59-48116, 9. USP 3,660,893

[REASONS FOR SUBMITTAL]

(Translator's note: indentations, carriage returns, etc. not recognized in on-line submissions are added below for greater clarity)

(1) In regard to claim 1, one of the characterizing features of claim 1 submitted in the Procedural Amendment of May 27, 2002, was the construction that "the second blade has an exposure not less than the exposure of the first blade and not greater than the exposure of the third blade." This means that, in a safety razor having multiple blades, the exposure of the blade following the leading blade is greater than that of the leading blade. As seen in the present invention, this means that the second blade is the following blade in relation to the first blade, and the third blade is the following blade in relation to the second blade. Constructing a safety razor in such a fashion is apparent to those skilled in the art. The reasons why will be explained below.

The advantageous point of a safety razor having multiple blades is that a shave deeper (translators note: deeper is the equivalent of closer) than a single blade safety razor is possible. The reason why is that, during shaving, the first blade drags the beard up while cutting it and the following blade can shave deeper cutting into the root of the whisker dragged up by the leading blade. However, if the blade edge of the following blade is submerged more than the edge of the leading blade, it naturally cannot cut the whisker at a position deeper than the cutting position of the leading blade. Accordingly, a safety razor having multiple blades in which the exposure of the following blade is smaller than the exposure of the leading blade cannot be actually commercialized.

A construction whereby the exposure of the following blade is greater than that of the leading blade is literally shown in Publication 9. A partial translation of Pub. 9 is appended here.

a. Pub. 9 discloses the construction of 2 or more blades arranged so that the edges of two or more blades are parallel and so that the blades move to follow one another over the skin to be shaved (col. 2, lines 54-56). Accordingly, this shows that a three bladed safety razor is clearly disclosed.

b. In col. 4, lines 29-33, of Pub. 9, although a 2 bladed configuration is described, these 2 blades are arranged so that the second blade (that is, the following blade) has an exposure that is greater than the desired exposure of the first blade (that is the leading blade). Consequently, one skilled in the art could easily tie in the teachings of Pub 9 into an arrangement of 3 blades with a construction in which the degree of exposure from blade to blade would increase gradually.

c. In particular, in col. 4, lines 49 to 53, a construction is described where, among the two blades, the leading blade has a negative exposure and the second blade has an exposure of zero.

In col. 4, it is described that a positive exposure can also be used. In a to c above, Pub. 9 clearly describes the following matters.

- *three bladed safety razor

- *first blade has a negative exposure

- *second blade has zero exposure

- *the second blade (that is the following blade) is made to have a greater exposure than the desired exposure of the first blade (that is the leading blade)

- *a third blade and

- *a positive exposure

Also, Pub. 9, as suggested by disclosures throughout Pub. 9 that the exposure is a gradually increasing geometric arrangement of the blades, implicitly discloses that the exposure of the second blade is a value between those of the first and third blades.

Accordingly, the construction that "the second blade has an exposure not less than the exposure of the first blade and not greater than the exposure of the third blade" of claim 1, is obvious from Pub. 9.

Further, the construction where the exposure of the following blade is greater than that of the leading blade is described not only in Pub. 9, but also in the

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drawings of Pub. 2 and suggested in Pubs. 3 and 4. Also, in Pub. 7, it is more pointedly described that the exposure distance of the front blade is -0.025mm and that the rear blade is $+0.025\text{mm}$.

Next, the exposure is numerically limited in claim 1. The first numerical limitation is the construction that the first blade exposure is a negative value and is not less than -0.2mm . Here, the first blade is the blade defining the edge nearest the guard.

The exposures of the first blade defining the edge nearest the guard as shown in the publications are as follows.

Pub. 3 from -0.05mm to 0.1mm

Pub. 7 -0.025mm

Accordingly, the exposure of the first blade being negative and not less than -0.2mm is described in Pubs. 3 and 7.

The second of the numerical limitations is the construction that the third blade exposure is a positive value not greater than $+0.2\text{mm}$. Here, the third blade is the blade defining the edge nearest the cap.

The exposures of the blades defining the edge nearest the guard as shown in the publications are as follows.

Pub. 3 from -0.05mm to 0.1mm

Pub. 7 0.025mm

Accordingly, the exposure of the blades defining the edge nearest the guard being positive and not less than 0.2mm is described in the Pubs.

At the time that the exposures of the blade nearest the guard and of the blade nearest the cap for two blades were described in the publications, using those values per se and further, applying the construction of the following blade having an exposure greater than that of the leading blade, which is obvious to those skilled in the art, to make a 3 bladed safety razor by adding another blade, would have been easy for those skilled in art.

In view of the above, the invention of claim 1 could have been easily invented by those skilled in the art based on the inventions described in Pubs. 1 to 4 and 7, and so should be rejected in view of the stipulations of Art. 29, para. 2 of the Patent Law.

In section 3. (1) Explanation of the Present Invention of the Appeal Request, it is described that "In a unit such as this, the position of the blade in relation to the

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other blades, the guard and the cap is determined by the exposure value of the blade edge and the span of the blade edge, and their dimensions have an affect on shaving comfort and shaving condition." That is exactly right, and such a statement, as is clear from Pub. 7, was spoken more than 30 years ago. Also, in regard to the exposure, there is a numerical value of about 1/10 of a millimeter. Many of those in the art had already started researching exposure values and a value of around 1/10 of a millimeter is a value easily selectable to those in the art.

Also, the numerical limitation in claim 3 is -0.04mm and the value corresponding to this in claim 1 is negative and not less than -0.2mm. In fact, this is fivefold. That is, there is no difficulty or special significance in limiting to a numerical value of around 0.1mm.

The numerical limitation in claim 3 is -0.04mm and in order to cover that, the numerical limitation in claim 1 is 5 times that value, making the scope very broad, and is a value that is essentially the same as originally filed claim 1, and which allows those skilled in the art other than the applicant to be excluded from working it. Specifically, although the real numerical limitation is concerned with units of 1/100 of a millimeter, claim 1 is related to 1/10 of a millimeter. The blades of a safety razor are formed much sharper than surgical knives, and are concerned with exceptionally small values, and numerical values defined under these conditions are the same as claim 1 before amendment with substantially no numerical limitations.

In the reasons for the present appeal, the applicant stressed that the present invention has a different construction than the references. That is, in contrast to each of the numerical values of the references relating to 2 blades, there is nothing that would suggest numerical limitations that could be applied to the 3 blades of the present invention. However, both the references and the present invention have common points in that they relate to safety razors with multiple blades, they both have guards and caps and they both have numerical limitations with regard to the blade closest to the guard and the blade closest to the cap. Also, continuing with a conventional structure, the second blade of the present invention, as in conventional practice, has an exposure greater than the exposure of the first or leading blade, and further, the third blade, as in conventional practice, also has an exposure greater than the exposure of the second or leading blade. Accordingly, the contents of this construction can be easily conceived of by those skilled in the art from the publications. Further, outside of claim 10, there are no remarkable effects are clear.

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Accordingly, there is no inventiveness.

(2) In regard to claim 2, this claim is for a safety razor blade unit according to claim 1, wherein the breadth between the first blade edge and the guard is in the range of 0.5mm to 1.5mm. As shown in the publications, the breadth, that is the span, between the first blade edge and the guard is as follows.

Pub. 3 0.7mm to 2.0mm, 1.5mm

Pub. 4 1.5mm

In these pubs., there are no descriptions of values from 0.5mm to up to 0.7mm. However, since there are such a variety of values to be found in the publications, even if there are no descriptions of regarding values that are not very different from those values, they are values that one skilled in the art could easily select. Also, there is no description about any kind of effect that the numerical limitations of present claim 2 display in contrast to the publicly known values of Pubs. 3 and 4. Applying a publicly known span for two blades to a three or one bladed safety razor unit is a matter that can be easily conceived of by anyone skilled in the art.

Consequently, the invention described in claim 2 could have been easily invented by those skilled in the art based on the inventions described in Pubs. 1 to 5, and so should be rejected in view of the stipulations of Art. 29, para. 2 of the Patent Law.

(3) In regard to claim 3, this claim is for a safety razor blade unit according to claim 1, wherein the exposure of the first blade is substantially equal to -0.04mm. This numerical value is very close to that of Pub. 7, -0.025mm. Also, Pub. 3 discloses a value of minus 0.05mm to plus 0.1mm. Accordingly, such a numerical value is in the realm of public knowledge and selecting -0.04mm is easily carried out by those skilled in the art. As explained in relation to claim 1, applying a publicly known exposure for two blades to a three or one bladed safety razor unit is a matter that can be easily conceived of by anyone skilled in the art.

Consequently, the invention described in claim 3 could have been easily invented by those skilled in the art based on the inventions described in Pubs. 1 to 4 and 7, and so should be rejected in view of the stipulations of Art. 29, para. 2 of the Patent Law.

(4) In regard to claim 4, this claim is for a safety razor blade unit according to claim 1, wherein the breadth between the edge of the third blade and the edge of the second blade is in the range of 1.0 to 2.0 mm. The breadth mentioned in this claim is

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the span between the blade edges of two adjacent blades, and the span between adjacent blade edges in the publications is as follows.

Pub. 3 0.7mm to 2.0mm

Pub. 4 1.6mm

This is within the range described in claim 4. Also, although Pubs. 3 to 5 are related to a two bladed safety razor, applying the values between two blade edges as noted in these publications to the values between two adjacent blade edges in a three bladed safety razor is a matter that can be easily conceived of by anyone skilled in the art.

Consequently, the invention described in claim 4 could have been easily invented by those skilled in the art based on the inventions described in Pubs. 1 to 5 and so should be rejected in view of the stipulations of Art. 29, para. 2 of the Patent Law.

(5) In regard to claim 5, this claim is for a safety razor blade unit according to claim 1, wherein the breadth between the edge of the second blade and the edge of the first blade is in the range of 1.0 to 2.0 mm. This is a numerical limitation to the breadth between the blade edges of two adjacent blades, and is not particularly different from claim 4. Accordingly, this should be rejected for the same reasons as noted for claim 4 above.

(6) In regard to claim 6, this claim is for a safety razor blade unit according to claim 1, wherein the breadth between the edges of the first and second blades and/or between the edges of the second and third blades is substantially equal to 1.5 mm. The breadth between two adjacent blades is described in the publications as noted above in (4), then, the values in Pub. 3 include 1.5mm.

Accordingly, claim 6 should be rejected for the same reasons as for claim 4.

(7) In regard to claim 7, this claim is for a safety razor blade unit according to claim 1, wherein the exposure of the second blade is substantially equal to zero. Stating that the exposure of the second blade is zero is the same as saying that the line that ties in the edges of all three is a common line. That is, this means that the edges of the three blades do not jut out or are not recessed. Pub. 8 is a safety razor with 3 or more blades, but from line 22 of col. 2 of the publication, it describes "Further, each of the blade edges are set at the same height". The invention of Pub. 8 has 5 blades and although the inner 3 blades would correspond to the second blade of claim 7, all of the edges of the 5 blades being at the same height would mean that the exposure of the three inner blades are zero.

Also, a safety razor wherein the exposure of the second blade is substantially equal to zero is exactly shown Fig. 3 of Pub. 1. That is, in Fig. 3, if a common tangent is drawn from the edge of the lower blade body 5 to the edge of the upper blade body 3, it can be clearly understood that exposure of the edge of the middle blade body 4 on the common tangent is zero. Such a structure is quite orthodox for a safety razor having more than three blades, and is a publicly known technique.

Consequently, the invention described in claim 7 could have been easily invented by those skilled in the art based on the inventions described in Pubs. 1 to 4 and 8, and so should be rejected in view of the stipulations of Art. 29, para. 2 of the Patent Law.

(8) In regard to claim 8, this claim is for a safety razor blade unit according to claim 1, wherein the exposure of the third blade has a positive value substantially equal in magnitude to the negative value of the exposure of the first blade. Just as stipulated in Fig. 3 of Pub. 1, if one looks at the exposure of lower blade body 5, the first blade and the exposure of the upper blade body 3, the third blade, the absolute values of those exposures are almost the same. Accordingly, the invention of claim 8 is the same as the invention described in Fig. 3 of Pub. 1.

Also, in Pub. 7, it is clearly described that the exposure distance of the front blade (formed by the blade edge nearest the guard) is about -0.025mm , and the exposure distance of the rear blade (formed by the blade edge nearest the cap) is about $+0.025\text{mm}$. Consequently, claim 8 can be easily invented based on Publications 1 and 7.

When those skilled in the art determine that the exposure of the lowest blade is minus and the exposure of the highest blade is plus for a 3 bladed safety razor they plan to manufacture, setting the absolute values to be the same is related to exposure to such a degree (sic) that those skilled in the art could come up with an instant proposal when discussing what degree of protrusion and retraction those values should have. The reason for this is, discussions about how to determine exposure have been going on for many years, as can be seen from the descriptions of Pubs. 2 to 7, and further, because the exposure for a safety razor is an extremely small value with a narrow range of choice, if one is to select a numerical value within such a narrow range, there would be nothing surprising or particularly difficult in making the absolute value of the positive and negative exposures the same.

Accordingly, the invention described in claim 8 could have been easily

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invented by those skilled in the art based on the inventions described in Pubs. 1 and 7, and so should be rejected in view of the stipulations of Art. 29, 3-1 and para. 2 of the Patent Law.

(9) In regard to claim 9, this claim is for a safety razor blade unit according to any one of claims 1 to 8, wherein the breadth between the first blade edge and the guard is substantially smaller than the breadth between the edges of the first and second blades and the breadth between the edges of the second and third blades. Claim 9, specifically, deals with the fact that the span between the first blade edge and the guard is smaller than the spam between the blade edges. This is disclosed in the left column, 3 lines from the bottom on pg. 4 of Pub. 4 where SL is 1.5mm and SF is 1.6 mm. SL is the span between the edge of the first blade and the guard and SF is the span between the edges of the blades. It is clear that anyone could conceive of the invention of claim 9 after looking at this description.

Consequently, the invention described in claim 9 could have been easily invented by those skilled in the art based on the inventions described in Pubs. 1 to 4 and 7, and so should be rejected in view of the stipulations of Art. 29, para. 2 of the Patent Law.

(10) In regard to claim 10, this claim provides numerical limitations for a 3 blade safety razor where each blade is provided to be resiliently movable against a spring force from a rest position from which they cannot be moved by said spring force. On pg. 3, line 12 from the bottom of the Appeal Request for this case, it was described that "In particular, as described in Claim 10, it was deemed that decreased drag in addition to enhanced shaving quality....", describing the effects of claim 10. Similarly, on pg. 5, from line 5, it was stated that "Contrarily in Reference 1.... no attempt is made to alter the drag force". This is only a talking about the effects of claim 10 and not about claims 1 to 9.

(11) Summarization

As discussed above, the present invention is an invention related to numerical limitations, that is numerical values regarding the exposure and span of the blades in a safety razor.

These numerical values have been discussed even 35 years ago as can be seen from the descriptions on pg. 5, left col., from line 14 in Pub. 5 and on pg. 2, left col., from line 1 in Pub. 6. Further, as is clear from the other publications submitted, they have been also roundly researched after that. Accordingly, these values per se are

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merely values selected by those skilled in the art, with no inherent difficulty in the values themselves.

The present invention, also seeks protection for the relationship between the relative exposure conditions of 3 blades, but such a relative relationship is disclosed in Fig. 3 of Pub. 1. In addressing the definitions of Fig. 3 of Pub. 1, even though it is difficult to say that Fig. 3 is exceptionally clear, it can be clearly understood that it describes the construction of present claim 1. That is, in Fig. 3 of Pub. 1, the edge of lower blade body 5 is clearly recessed from a tangent drawn from the edge of middle blade body 4 to the guard bar of blade receiver 7. Further, the edge of upper blade body 3 is clearly protruding from a tangent drawn from the edge of middle blade body 4 to the cap 6. There is only a problem in that this publication does not describe any numerical values. However, even though there are no numerical values in this publication, other publications describe what kind of values are good.

As mentioned above, if the exposure of a blade is too small, the beard cannot be cut and it is dangerous if it is too big, so it is only a matter of course that the numerical values are determined. The largest exposure described in the submitted publications is 0.1mm and the smallest -0.2mm. Restricting the use of numerical values in such a range at this point in time, is felt to unfairly harm the interests of third parties.

Also, in regards to span as well, it is dangerous if too broad and not practical if too narrow as the cut whiskers cannot pass between the blades. Accordingly, the numerical values are determined as a matter of course. The descriptions of the submitted publications show a greatest value of 2.0mm and a smallest value of 0.7mm for the span between the lower blade and the guard bar. The greatest value for the span between two blades is 2.0mm and the smallest value is 0.7mm. Accordingly, it is felt that restricting the use of numerical values in such a range unfairly harms the interests of third parties.

[doc. name] Notice of submission of publications, etc.

[patent] H07-510376

[issue no.] 105181 pg. 1/1

Notice

**November 27, 2003
Commissioner of JPO**

Appeal Request Number:	Fufuku 2002-20069
(Patent Application Number):	(H7 Patent Application No. 510376)
Appellant:	The Gillette Company
Patent Agent for Applicant:	Kenji Yoshitake (& 6 others)

In regard to the application of the present Appeal, we hereby inform you that there has been a submission of information comprising the submittal of publications, etc. on October 16, 2003.

The submitted information can be inspected by submitting a request to inspect appeal documents.

Appeal Secretary

H. Uchiyama

7545

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Appeal Decision

Fufuku 2002-20069

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In regard to the present Appeal against the final rejection of Pat. Application H07-510376 (Safety Razor) [International publication on April 6, 1995, WO95/09071, published in Japan on March 25, 1997 as Patent Publication H09-502912, 10 claims], we decide as follows.

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Decision

The original Final Rejection is cancelled.

The invention of this application should be patented.

Reason

The present application was filed on September 22, 1994 (claiming Paris Convention priority from GB application of September 29, 1993) and the inventions related to claims 1-10 of that application are recognized to as described in claims 1-10.

Further, even though the reasons for rejection of the original final rejection were studied, it cannot be determined that the application should be rejected for those reasons.

Also, no further reasons for rejecting this application can be found.

Accordingly, the finding is as noted above.

November 27, 2003

Chief Appeal Examiner Appeal Examiner Y. Nishigawa
 Appeal Examiner A. Mihara
 Appeal Examiner T. Kamizaki

[Decision type] P18 . 121-WY (B26B)

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